How to Cite:
Al-Atta, T. A. L. A., & Elgabar, M. A. (2022). Towards formulating a methodology for the integrated management of vacant areas to enable the development of Egyptian cities. *International Journal of Health Sciences*, *6*(S2), 14861–14885.
https://doi.org/10.53730/ijhs.v6nS2.8947

Towards formulating a methodology for the integrated management of vacant areas to enable the development of Egyptian cities

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***Abstract*---**Vacant areas are a vital resource for the provision of housing projects, services, and infrastructure in Egyptian cities, and can be used, according to their sizes, ownership, and shapes, to support sustainable development processes, and according to the databases of the cities under study from researchers, which represent 20 Egyptian cities, vacant areas represent a proportion ranging between 9-35% of the land use budget. In addition, during the period (2015-2020), the state allowed citizens to return the occupied lands, which contributed to the existence of large areas, but there are many challenges facing the vacant areas management system in terms of the lack of an integrated information system in terms of registration, updating maps, information available to investors and inventory of vacant areas in the state. Also, the institutional framework of vacant areas suffers from fragmentation and is a complex framework. The legislative framework also suffers from the conflict of legislation, so there is a need to review and evaluate the situation currently, and what are the successfully integrated management ideas in reforming the vacant areas system to maximize its role in sustainable development in Egyptian cities.

***Keywords*---**integrated management, vacant areas, causes vacancy, characteristics vacant areas, challenges, solutions.

Introduction

Vacant areas are a feature of urban areas in the cities of the world. In the cities of the United States of America with a population of more than 250 thousand people, the percentage of vacant areas ranged between 12.5-15%, and its rate ranged 44% in Rio de Janeiro in Brazil, which could be the reason behind the existence of vacant areas is the expansion of the creation of suburbs, industrial decline, land pollution, migration outside cities, lack of investment, and failure of supply and demand in the market. (Kremer, Hamstead (2015). p, 1.) (35) Because of the growing urban population rapidly, human needs will be increased (Inam (2012). p, 10.) (24). All urban areas grow in two ways either: expansion or condensation, so the management must accommodate both: urban planning and land policies, and direct both through a set of integrated mechanisms for the development process of vacancy. (ADB, (2013). p, 9-13) (7) A vacancy means a loss of place and sense of community. (Stewart, Gobster, Rigolon, Strauser, Williams, Riper (2019). p, 200) (53) It is important to know the contributing factors to land vacancy and to explore the interrelationships between these factors. (Newman, Park, Ann, Bowman, Ryun (2018). p, 421.) (39) Bowman, Ryun (2018). P, 1-2. (9) Determining the causes of land vacancy will lead us to know the indicators of urban conditions currently and in the future, and also to discover the necessary guidance for local policymakers. (Newman, Park, Ann, Bowman, Ryun (2018). p, 421.) (39) Local governments must understand the conditions for land vacancy and find the appropriate solutions for it. (Papagano & Bowman (2000). p, 8.) (43).

The reasons for the vacancy can be attributed to physical, or economic (Kim, Miller, Nowak (2018). p, 144-146.) (31) Administrative, or natural causes. (Goldstein, Jensen, Reiskin (2001). p, 8.) (18) One of the most important economic reasons is the Great Downturn in the period from 2008-to 2009 which was intensified the problems of vacant areas through its numbers and sizes (Newman, Park, Ann, Bowman, Ryun) 2018). p,421.) (39), Declining industrialization and residents' preference for new types of housing options also have led to an increasing vacant area in urban cities. (Kim (2016). p,1.) (30) Also, economic conditions, and unemployment rates. (GAO, (2011). p, 83) (55) In addition, being in an unsuitable location, or due to lack of supply, and may be left undeveloped for long periods, or oversupply, or other conditions (Kim, Miller, Nowak (2018). p,146. (31), and maybe the result of insufficient investment. (Song, Wen, Shen, (2020). p, 669-671) (51), and maybe the result of higher taxes (Goldstein, Jensen, Reiskin (2001). p, 8.) (18).

Among the most important physical causes: are an excessive division of the land, irregular shapes, a decrease in the resident population, or speculation on land (Song, Wen, Shen, (2020). p, 669-671) (51), also random growth, Unbalanced distribution of land uses, traffic jams, scarcity of green and open spaces, noise, and severe deficiency of planning in the city center. (Kamal, Marghani, Adib (2009). p, 792-794.) (26) The most important environmental and social causes are natural barriers (Goldstein, Jensen, Reiskin (2001). p, 12.) (18), environmental concerns (Song, Wen, Shen, (2020). p, 669-671) (51), Population variations and land area change (Newman, Park, Ann, Bowman, Ryun (2018). p, 427.) (39).

The research problem is summarized in the presence of a clear deficiency in the process of managing vacant areas in Egyptian cities, which led to the occurrence of many negative aspects in the urban environment, which needs an integrated system for managing vacant areas to reduce these problems and achieve sustainable development. The study aims to study the possibility of applying the integrated management elements for vacant areas to reduce the problems of land management deficiency and enable sustainable development in Egyptian cities.

Methodology

The study uses the analytical method, way of it review examples of land management deficiencies in many cities internationally, the possibility and need of applying these elements to Egyptian cities to reduce the problems of land use, and extract the recommendations to try to reach successful integrated management of vacant lands to enable development in Egyptian cities and achieve sustainable development.

Integrated management elements to vacant areas

It is the methodology used to reach the most efficient use from the economic, environmental, and urban aspects. in addition to achieving social justice for the population. The elements of vacant areas management include five main elements: the economic dimension (land development policies economically) - the institutional and legislative dimension (land legislation) - the physical dimension (land development policies). The environmental and social dimension (protection of the natural environment) - the information dimension (the information system for maps and land registration systems), and it is not required that all of these elements be present in every successful management process for vacant areas, but rather it depends on the needs of each city. (Kamal, Marghani, Adib (2009). p,797.) (26)

Monitoring and Analysis of Vacant areas Characteristics

Vacant areas are a very important resource for production and constitute the nation's capability and its fixed assets, and it is the spatial store for comprehensive sustainable development. (Mohamed (2013). p, 19-20.) (38) According to previous studies, one of the most important benefits of converting vacant areas economically is an increase in the value of neighboring properties. (McPhearson (2012. p, 5.) (37) In addition, it attracts investment and generates revenue and it is a common tool in countries like China. (Koroso, Zevenbergen, Lengoibon (2020). p,1.) (34) Regional location and economic growth strongly influence vacant areas. (Newman, (Park, Ann, Bowman, Ryun (2018). p,427.) As well as, one of the most important benefits of transforming vacant areas physically: is it improves the physical condition, and the aesthetics of the neighborhoods, and they are not public places in the legal definitions and are seen as comfort facilities in a similar way to services. (Heckert, Mennis (2012). p,2-3.) (21) Vacant areas that are not developed or await development can serve small, or long-term or temporary uses such as community parks, wildlife parks, communal farms, and recreational areas (Kremer, Hamstead, McPhearson (2013). p,2.) (33).

Among the most important benefits of converting vacant areas environmentally, are: rainwater absorption, temperature regulation, wind speed reduction, air purification, habitat for biodiversity, green corridors between natural areas, recreational space, community garden, crime reduction, noise reduction, beautification of Neighborhoods, space for social gathering temporary, space for artistic training, sense of place, sense of comfort, and energy savings McPhearson (2012. p,5.) (37) Vacant areas help for creating opportunities to improve green spaces and natural systems, creating a regional growth framework that balances the need to repurpose vacant plots with the provision of ecosystem services, as they can act as a conservation area for wildlife, river corridors, and green spaces. (Newman, Lee, Berke (2016). p, 37.) (42) Vacant areas can be viewed as a potential source of ecosystem services that are supported by the health and well-being of local people. (Kim (2016). p,1.) (30) Vacant areas also have multiple benefits to the environment and disadvantaged areas. They can serve as green infrastructure and provide ecosystem services for the community such as air pollution removal, carbon sequestration and storage, and tree planting, and this would improve human health and quality of life. (Kim, Miller, Nowak, (2015). p, 525.) (32) Vacant areas can also represent an opportunity to find solutions that preserve and protect urban heritage as they provide efficient urban design. (Shublaq, AbuRaed, Alqalami, Altwassi, Pizarro. (2022). P, 1-4) (48) Vacant areas can also be an opportunity for stormwater management in large urban cities, and rainwater control in natural areas. (Kelleher, Golden, Burkholder (2020). p,2-3.) (29).

Among the most important benefits of converting vacant areas socially are that they have a prominent role in integrating the traditional community into the urban fabric of the city through the exploitation of the vacant plots, where there is low-density development, poor quality of life, loss of identity, and poor communication between open spaces. (Shublaq, AbuRaed, Alqalami, Altwassi, Pizarro. (2022). P, 1-4) (48), They can also, rebuild the social capital when neighborhood residents cooperate and engage in the planning process. (Rees, A., et al. (2011). p,19.) (46) Improvement of the vacant plot contributes to the possibility of rearranging the identity of the place concerning urban age and neighborhood. (53). It can also work on greening and reclamation, which increases the development of neighboring properties. (Rees, A., et al. (2011). p,19.) (46)

Vacant areas can be classified by land cover, land use, and land ownership. (Stewart, Gobster, Rigolon, Strauser, Williams, Riper (2019). p, 201) (Song, Wen, Shen, (2020). p, 669-671) (51), in Japan, for example, large vacant areas are divided into two types: land that has already been converted for other uses hereinafter referred to as converted land) and land that has not yet been converted (hereinafter referred to as hanging areas). (Kobayashi, D, T, Ikaruga, S (2016). p,394.) (27) Another study classified vacant areas by appropriate methods for automatic detection of vacant areas through remote sensing images, GIS layers, and demographic data by residents for each type of vacant areas, such as lands associated with transportation, lands left to natural causes, uncontrolled areas, vacant areas within the urban fabric, brownfields. (Xu, Ehlers, (2022. p 1-2) (48)

According to previous studies, one of the most important variables affecting land vacancy, some studies have indicated that the variables were: (employment, financial situation, flexibility, population variation, and regional location). (Mohamed (2013). p, 221.) (39) In another study were: the distance of infrastructure, the density of vacant areas, and crime. (CAPMS (2017). p,5.) (11) In another study were: owner, plot location, ownership limits, plot size, property tax, and aerial photographs on the street level (Googlea&Bing) (Gobster, Rigolon, Haddadi), Stewart (2020. p,4-7.) (19). In another study were: land value, income, proximity to highways, proximity to public services and utilities, land size, poverty, unemployment, recreational services, and educational services (Newman, Lee, Berke (2016). p,8-11.) (41) In another study were: proximity to the floodplain, type of land cover, type of soil, public or private ownership, property value, proximity from parks, proximity to educational institutions, proximity to employment opportunities. (Newman, Hollander (2016). p,11.) (40) In another study were: (regulation of land use, percentage of buildings coverage, percentage of land area, distinction between zoning and area plan, and location of the urban master plan). (Kobayashi, D, T, Ikaruga, S (2016). p,394.) (27).

According to many studies, the vacant areas increase with the growth of the population of cities with low densities. Because of an increase in the number of vacant properties, poverty rates can rise and land values can decrease. (Newman, Park, Ann, Bowman, Ryun (2018). p,422-427) (39) Some studies have demonstrated that vacant land is often associated with cities that have expanded their political boundaries, and the number of abandoned buildings is associated with city demographic change. (Bowman, Pagano (2000). P, 1-3) (9)

Monitoring and analysis of challenges facing the Vacant Areas

Many research studies have discussed vacant areas as if they were all the same largely because there is a limited systematic classification of its different types, and how different types of vacant areas collectively contribute to urban land use. The purpose of this is to define a restricted classification of vacant land to help planners, developers and stakeholders make better use of them (Kim, Miller, Nowak (2018). p,146.) (31) It is also necessary to understand the conditions of vacant areas, the opportunities, and challenges that result from these conditions, as cities have different rates of population and land. (Papagano & Bowman (2000). p,8-9.) (43) The challenges facing vacant areas vary between economic, administrative, legislative, environmental, social, physical, and informational. The study will analyze those challenges as follows:

Economic Challenges Facing the Vacant Areas

The expansion of cities towards the suburbs, despite the availability of vacant areas in the city's neighborhoods, especially the downtown, increases the costs of infrastructure that cannot be borne by local governments, as well as control through taxes, in addition to the development of a real estate appraisal system based on market value for vacant areas which reduce tax revenue losses and fees resulting from tax interest. (Aliefendioğlu, Sevgen, & Tanrıvermiş. (2017). P, 2,27,) (4) Taxes on vacant areas ate considered one of the most important revenues needed for the sustainable development of cities in the long term, and this

requires continuous improvements in management, as increasing Taxation on vacant areas has many rules that require: stimulating investors to ensure more efficient use of vacant areas, although taxing vacant areas may be politically undesirable as well as has negative and side effects as it can affect privacy, investments, and efficiency of land use as a scarce resource in cities and thus the complete urban transformation of the city. (Haas, Kopanyi (2017). p,2-3.) (21) as well as the economic framework of the metropolitan area and its transport network in terms of organized growth, accessibility, and management of development. Transportation and provision of services will be also expensive. (ADB, (2013). p, 9) (7).

The programs that sought to develop through the consolidation and integration of vacant areas had good results, but they were expensive and could not be borne by the municipalities. (Blumner. (2006). P, 3) (8) Vacant areas in low-income areas are likely to remain undeveloped longer than in rich areas due to the unattractiveness of private developers. In addition to the vacant areas in the old industrial cities have little desire to renew them without external private investment, or the expected profit. (Zhu, R & Newman, G. (2021). p, 17) (56) Vacant areas also affect the commercial vitality of the district. (John Accordino & Gary T. Johnson (2000). p,1.) (25) Announcing the sources of financial and technical support also is a big challenge (Rees, A., et al. (2011). p,19.) (46) As well as low tax revenue (Blumner. (2006). P, 3) (8) Vacant areas also reduce the value of neighboring properties on the because of lack of services, In Egypt, no law imposes tax revenues on owners for not exploiting these lands, which constitutes the absence of any pressures on landlords to think about development and to limit themselves to monopolizing vacant areas for a long period to increase its value. (GOPP (2019.p,) GOPP (2019.) (16)

Figure 1. Vacant areas in the Egyptian city's neighborhood were monopolized for separate periods to increase their prices (IFV (2019) (23)

Administrative and legislative Challenges Facing the Vacant Areas

Perhaps the difficulty in urban land redevelopment policy in many of them is in the decision-making stages, it has been stated in many projects that the actors involved have changed previous decision-making from time to time without convincing reasons, and this has led to improper and inefficient use of land Publicly owned, in Bangkok, Thailand, for example, vacant areas remained vacant, or used as a proposed plan without being developed. ((Aruninta, (2005). p, 1-3 (5) The development of vacant areas can also be hindered by political will. (ADB, (2013). p, 13) (7) Since not all local administrations have Databases of their own the collection of information at the state level remains a challenge, especially in the countryside where municipalities do not have the necessary time and skilled personnel to research and classify vacant areas (Xu, Ehlers, (2022. p 1-2) (48) and through field studies Which were conducted on 20 Egyptian cities and through field monitoring, the most important problems facing the land administration are: the fragmentation of the institutional framework and the lack of coordination between the state authorities that have the authority to dispose of it, the absence of a comprehensive and binding national plan, and the limitation to strategic plans, the multiplicity of agencies that It has the authority to own, use, dispose of and use the lands of the state. Figure () shows the most prominent ministries and bodies that have the right to allocate vacant areas of the state.

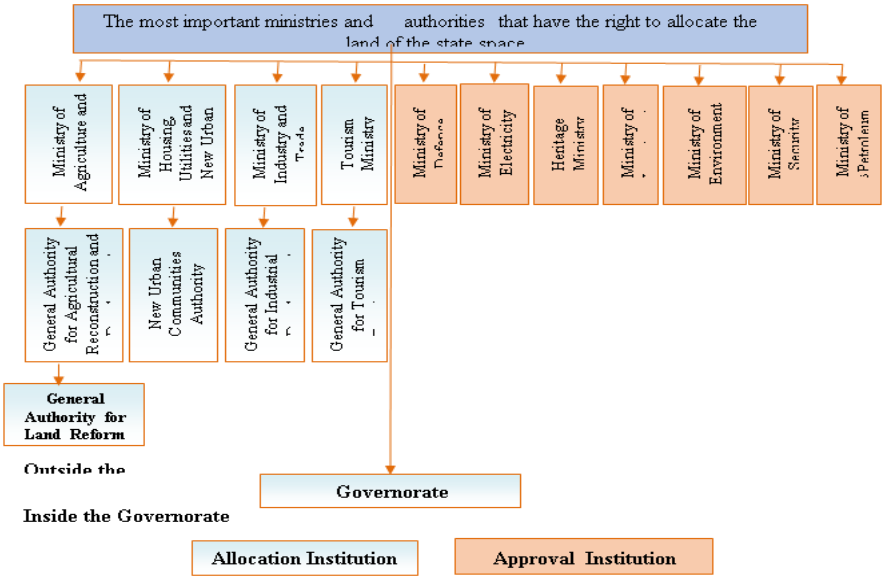

Figure 2. The most important ministries and agencies have the right to allocate vacant areas (Aboud, (2017). 1-7) (1)

Concerning legislation, many laws and legislations have a direct relationship to land, and there are more than (50) legislations between a law, a republican decision, and a prime minister's decision, but most of them are outdated and not keeping pace with developments in the field of land management, inconsistent and conflicting.

Physical challenges Facing the Vacant Areas

The presence of these vacancies affects the future planning associated with the development of the compact city, although for example there are large vacant areas in various parts of Japanese cities, an overview of the impact of these plots has not been provided. (Kobayashi, D, T, Ikaruga, S (2016). p,394.) (27) Aging infrastructure presents also a great challenge in the process of redevelopment, for example, Germany includes 50 hectares every day to its stock of vacant areas and there is no development template expected to meet this vacancy, while in the United States of America it loses one million acres annually to the benefit of vacant areas. (Bluemner. (2006). P, 3) (8) Vacant areas are also not large enough to be developed. (Kim, Miller, Nowak (2018). p, 145.) (31) Or that land is vacant and left undeveloped (Kim, Miller, Nowak (2018. p,.) 31) Likewise, the mere formulation of leasing policies Vacant areas alone is not sufficient to ensure effective use of urban land. (Koroso, Zevenbergen, Lengoibon (2020). p,1-2.) (34) According to field studies, one of the most important challenges facing the development of vacant areas is the faltering of comprehensive development programs, and the lack of a comprehensive, binding national plan (Aboud, (2017) (1)

Where the area of the Egyptian globe is 6%, it includes all forms of encroachment, as this is in response to the needs of many of the population, where the problem of the land occupies a major center in this phenomenon, and according to field and survey studies, one of the most prominent challenges facing the process of developing vacant areas locally: Egyptian cities suffer from not meeting the minimum level of services, and concentrating them in major cities. It is the failure to benefit from the most important assets owned by the state for thousands of vacant plots of land in Egyptian cities. As well as facing the current and future challenges facing Egypt (population - poverty - unemployment - regional development). In addition, benefit from technological wealth in modernizing the land management system (GOPP (2014.p,) (17)

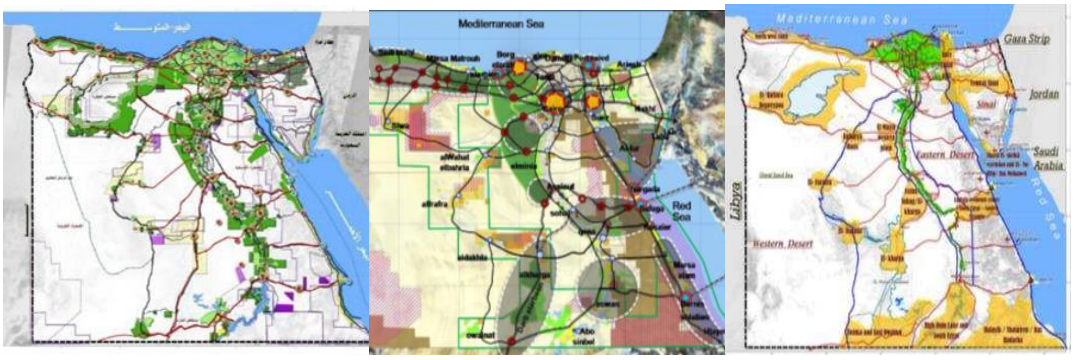

Figure 3. The area of the globe in Egypt in 2050 (inhabited area 15%) (GOPP (2014)

The vacant areas are steadily increasing in the Egyptian cities. The statistics show the steadily increasing vacant areas within the urban age of the cities under study, where the satellite images show the great change in the size of the cover,

Figure () shows the increase of the vacant areas of the cities under study in the period (2004-2022).

(a)

(b)

(c)

Figure (4) The increase of the vacant areas of the Lage cities under study in the period (a) Zagazig City (b) Banha City (c) Kafr Al-Sheikh City(GOPP (2019) (16)

(a)

(b)

(c)

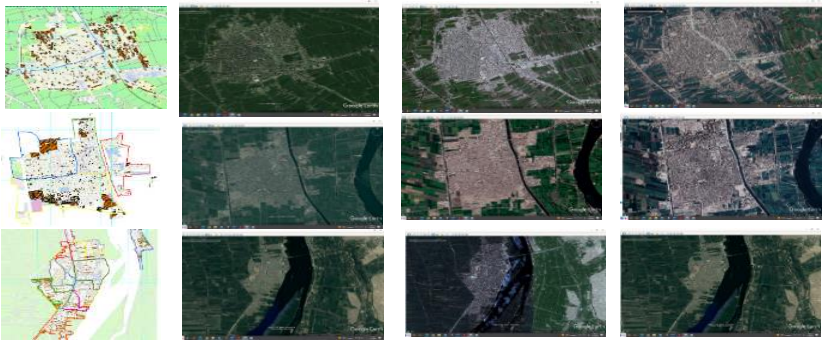

Figure (5) The increase of the vacant areas of the Medium Cities under study in the period (a) Ashmon City (b) Mallawy City (c) Edfo City. (GOPP (2019) (16)

(a)

(b)

(c)

Figure (6) The increase of the vacant areas of the Small Cities under study in the period (a) Alkorna City (b) Samanoud City (c) Meet Salsil City (GOPP (2019) (16)

and as an example of the size of the change, a model for a city was chosen for which a study was prepared in the light of the United Nations Human Settlements Program (UN-Habitat) in 2020, where the city's condition was followed up to know the progress made in the implementation of the various procedures or activities

proposed by the strategic plans. The latest study in this regard is considered, which gives indicative results that can be projected to the rest of the Egyptian cities. The change in the land cover of the city has been studied. The following table shows the sizes and rates of change in the land cover in the perimeter of 500 meters from the boundaries of the approved urban space for the city of Quatuor.

Table 2. Land cover change rate (perimeter 500 meters from the boundaries of the vacant area) (6) (QCIC (2017). P,) (45)

The growth of the urban mass of the city		
The urban block of the city in 1986	No statement	
The urban block of the city in 1996	279.69 acres (2018 database)	
The urban block of the city in 2006	487.23 acres (2018 database)	
The urban block of the city in 2018	648.36 acres (2018 database)	
Change in agricultural areas within the urban mass of the city		
Agricultural areas within the urban block of the city 1986	Area (acres): no statement	Ratio: no statement
Agricultural areas within the urban block of the city 1996	Area (acres): 49.89	Ratio: 17.83%
Agricultural areas within the urban block of the city 2006	Area (acres): 176.78	Ratio: 36.28%
Agricultural areas within the urban block of the city 2016	Area (acres): 175.94	Ratio: 27.14%
Change in waste lands within the urban mass of the city		
Waste lands within the urban block of the city 1986	Area (acres): no statement	Ratio: no statement
Waste lands within the urban block of the city 1996	Area (acres): 52.32	Percentage: 18.71%
Barren lands within the urban block of the city 2006	Area (acres): 66.98	Ratio: 13.75%
Barren lands within the urban block of the city 2016	Area (acres): 170.89	Ratio: 26.36%

Figure (7) The increase of the vacant areas of Qotour in the period of (2002-2022) (GOPP (2019) (16)

Social and Environmental Challenges Facing the Vacant Areas

Population density decline is one of the most significant indicators of an increase in vacant areas. When people leave urban areas, the land falls in value and becomes untapped. As a result, parts of the community are alienated from each other, safety threats exist and the quality of life in the city decreases, with lower rents contracts generate less income., which makes building maintenance difficult, which leads to lower property values and makes the plot of vacant areas a tax burden for the owners. (Newman, Lee, Berke (2016). p,2.) (41) Also, declining population, and poverty. (Blumner (2006). p,8-27) (8) Vacant buildings and vacant areas also affect many aspects of community life, affecting neighborhood vitality and crime prevention efforts (John Accordino & Gary T. Johnson (2000). p,))25). The vacant areas are also targets for vandalism, criminal activities, environmental damage, visual pollution, health risks resulting from the disposal of solid and liquid waste from neighboring neighborhoods, high crime rates due to the vast land that is criminals' hideouts, its monopoly for decades, and the imposition of no taxes on vacant areas from the localities. (IFV (2019). p,) (23). Figure () illustrates the social and environmental challenges facing vacant areas in Egyptian cities.

(a)

(b)

(c)

Figure 8. Social and environmental challenges facing empty lands in Egyptian cities. (a) Almahal City, (b) Shubra City, (c) Tanta City. (GOPP (2019) (16)

Informational Challenges Facing the Vacant Areas

Perhaps one of the most important challenges facing the development of information system of vacant area is working to find mechanisms to build a land-use model in urban areas and to establish relationships between the variables of spatial expectation and the sites of expected change. Choosing forecasting tools to analyze Spatio-temporal dynamics of land use, estimate the effects of changes, and forecast future land use. (Newman, Lee, Berke (2016). p,4.) (41) Also work on finding mechanisms to use the trapping model in ARC GIS to determine the development potential and environmental value of vacant areas (estimated provision of environmental services) (Newman, Smith, Brody) 2017) p, 37. (42) Egyptian cities suffer from the lack of an integrated and updated information system on vacant areas in Egypt and the tools for that shortcoming are diffuse in

terms of (registration - updating maps - information available to investors - inventorying vacant areas in the state), and one of the most important Obstacles related to registration: The multiplicity of registration systems - their high cost - their long duration - the difficulty of their procedures. The obstacles related to the maps include multiple parties - multiple and outdated maps - lack of material and human resources - deterioration in the property registration index. As for the information available to investors, obstacles include limited information - lack of transparency in allocation and pricing - mechanisms of expropriation, and compensation assessment. In addition to that, the inventory of vacant areas in the country, including Information not available - Focusing on the state authority - The existence of disputes, knowing that it may take 5-15 years to register a plot of land, and the percentage of the total registered lands ranges from 10-15% - It is not possible to stop On the Final Position of Ownership, Tenure, and Use of Land - Land Policies are developed in the absence of updated integrated information on land (Aboud, (2017). p,) (1) (GOPP (2019. p,.) 16).

Results and Discussion

Monitor and analyze the reform system for the integrated management of vacant areas

Mechanisms of developing vacant areas Economically

According to previous studies of innovative approaches to redevelopment such as, regional governance, land-use planning, or programs aimed at addressing the location-based constraints of a plot of vacant area. In addition to giving the government clear policy signals to developers who encourage redevelopment, paving the way for real estate to re-enter the land market. Partnership between the private and public sectors also through community development institutions. (Goldstein, Jensen, Reiskin (2001). p, 22.) (18), and some studies have proven that the expansion of cities towards the suburbs, despite the availability of vacant areas in city neighborhoods, especially downtown neighborhoods, increases the costs of infrastructure that cannot be the local governments also bear the control of through taxes. Also, the development of a real estate appraisal system based on the market value of vacant areas reduces the losses of tax revenue and fees resulting from the tax interest, and it was found that it is possible to control urban sprawl and the need to establish a real estate valuation system based on value. market value and thus reduce tax collection losses. In the Çukurampar district and in a study conducted on 86 vacant plots that were converted from land to plots, a difference of 3.2% was found between the actual land tax earned by the municipality and the amount to be charged for good market value (Aliefendioğlu, Sevgen, & Tanrıvermiş (2017) P, 22-23) (4)

Among the mechanisms adopted by the Egyptian government to develop open lands is the issuance of Investment Law No. 72 of 2017, which gives investors general incentives and others targeting specific sectors, including numerous tax and customs advantages, simplifying procedures for starting activity through investor service centers and providing some information about the land available for investment and its fields through The map of investment on the land (Articles

55-67 of the law in addition to Article 21 of the Investors Service Center) and articles (44-59 of the executive regulations of the law). the state. (ERIL (2017) (12) One of the most important effects of the investment law is that the state bears the value of what the continuity is responsible for connecting the facilities to the property allocated to the investment project or part of it, after operating the project, refunding half of the value of the land allocated for industrial projects if production begins within two years from the date of delivery, drawing up an investment map that determines the quality The investment system, its geographical areas, and sectors, in coordination and cooperation with the relevant state agencies. (ERIL (2017) (12) (Aboud, (2017). p,) (1) The importance of the law comes in line with Egypt's 2030 Sustainable Development Strategy launched in 2016 to achieve balanced economic and social development. (55).

Mechanisms of developing vacant areas institutionally and legislatively

According to studies, the most important mechanisms for developing vacant areas are the provision of tenure, land registration, cadastral information, financing for the purchase of land, political will, and institutional capacity. (6) Also identifying information on lands at risk, directing land development through land consolidation, identifying accessible areas, and attached lands, and making available ownership. (6) Also land management cannot be separated from urban planning and the two must work together to provide a sustainable and resilient urban social and economic service. The adoption of clearly defined regulations, including institutional laws and procedures for zoning, zoning, and administration, ensures development. (ADB, (2013). p, 9-13) (7) In addition, the required institutional capacities, whether at the level of the private or public sector. (7) Also, real estate banks are formed as a way to process vacant areas on a large scale and provide mechanisms for identifying and transferring vacant positions, holding land ownership, and providing many services related to land ownership such as property taxes (or exemption from it), and insurance costs. (Kremer, Hamstead (2015). p,3-4.) (35) In Japan, an important factor in the successful conversion of vacant lots is the strengthening of facility management after construction use. In Akita and Yorihongo cities, in many cases many medical facilities have been converted the vacant social care was converted into gardens, a vacant plot of land was converted from a factory into a cultural or interactive facility, and the vacant plots were temporarily used for an event or parking for city visitors until construction. These projects have involved an after-administration and a voluntary group to do so. (Kobayashi, D, T, Ikaruga, S (2016). p,400.) (27)

In Egypt, the Egyptian government hastened to find institutional and legislative mechanisms for the development of vacant areas by Forming a committee for the recovery of state lands and their entitlements (Republican Resolution 75 of 2016). As well as the inventory of all debts owed to the authorities with jurisdiction over the land and the classification of debtors. Also, coordinate with the authorities with jurisdiction regarding the legal and administrative procedures used to recover the land. (SLR (2016. p,.) 52 UPL(approved by the Council of Ministers in December 2017): The law aims to establish a planning system at all levels, addresses the imbalances that the current planning system suffers from, enables follow-up and evaluation, and reduces opportunities Wasting public money, the

importance of the law is also attributed to the fact that it comes within the framework of the state's directions for legislative reform and eliminating the obsolescence of some legislation due to economic and social changes to replace Law 30 of 1973. (54).

Mechanisms of developing vacant areas physically

Vacant area helps the city in providing a main line of communication, functional spaces, and revitalization of the area, and this is done by applying the theory of green fingers in a way that combines or integrates the site as a whole with its surroundings. (Shublaq, AbuRaed, Alqalami, Altwassi, Pizarro. (2022). P, 1-4) (48) As well as researching variable methods of land collection and improvement, governance reform, local law reform, urban renewal, information redevelopment, and systems development local. (Papagano & Bowman (2000). p,8.) (43) Also planning and development considerations for the development and provision of public services. In addition to this, prompting governments to search for other affordable alternatives, such as temporary use of the land, which provides a great opportunity for citizens to play a greater role in developing their cities, as the government is developing or providing more flexible planning techniques (temporary use), which is the temporary revitalization of vacant areas and buildings. In coordination with the owner, until the investor appears, temporary use is not considered long-term use of the land, and the owner and user obtain the necessary permits and data for the activity that the user wants to carry out. In Berlin, there are 700 hectares of vacant areas, including abandoned factories in cities, and in 2004 the government began to announce temporary use, and provide the necessary databases, and the benefit of temporary use is to complete the development process, even if it is fake, not to forget the development of this place, in Leipzig: more than 300,000 vacant units and hundreds of plots of vacant areas, 80% of which were private property, and the motto of temporary use was: more green, less density. 1 million residents, 606 km city cover, 8,000 vacant lots, mostly on the south and west side, in Massachusetts the sites were cleared of polluted brownfields and used for field trips, in Philadelphia 40,000 lots were vacant, City Parks Agency. (Blumner (2006). p,8-24.) (8) Economic development within cities comes through realizing the potential advantages of vacant areas sites within inner cities, encouraging the internal work environment through the collection and improvement of sites, and upgrading the level of infrastructure. (Porter (2019). p,11-17.) (44) Also, and local administrations must give feasible solutions to meet service requirements, provide necessary infrastructure, and housing programs, and must make land consistent with urban policies. (Inam (2012). p,5.) (24) There is increasing support for compact city ideas to counteract the increasing urbanization processes in medium and high densities cities where urban growth boundaries are demarcated or urban edges are designed to protect natural resources outside the urban area, and to encourage the growth of population density within those areas as well. (GHS (2009) (15)

Egypt, cities in Egypt contain different types of vacant areas and can function as integrated urban infrastructure systems in short and long-term city plans. Through field studies of 20 Egyptian cities and analysis of aerial photographs, to identify and classify the empty plots of land. The characteristics of vacant areas have been inventory, and different types of lands are classified according to size

and ownership, which can represent a lung and an outlet for solving urban problems in Egyptian cities and achieving sustainable development. Figure () shows the different and varied characteristics of vacant areas in Egyptian cities.

(a)

(b)

(c)

Figure 9. shows the different and varied characteristics of vacant areas in Egyptian cities, (a) Banha City. (b) Kafr Al-Sheikh City, (c) Ashmon City. (GOPP (2019) (16)

The optimal use of resources, such as vacant areas, can play an important role in enabling urban development in Egyptian cities. Table (1) shows the area of vacant areas and the number of plots in the selected cities, which was conducted by the researcher based on the strategic plans that were prepared for those cities, as Figure No. (1) shows the vacant areas distribution and proportions in the selected cities.

Table 1. the area of vacant areas and the number of plots in the selected cities (GOPP (2019) (16)

City name	District No.	Total area for another uses/acre	Total lots for various uses	Total Vacant lots area/acre	Number of vacant lots	Vacant areas ratios
Kafr Al-Sheikh	2	1308.44	16793	75.64	273	5.78
Zagazig	2	2496.58	7267	407.55	2025	16.32
Banha	10	1721.32	8562	130.59	785	7.59
Ashmon	3	578.066	10870	60.06	621	10.39
Qotour	1	495.54	3661	152.82	1793	23.58
Mallawy	4	623.513	15005	95.64	684	15.34
Singlawin	14	970.357	3560	185.89	477	19.16
Derb Najm	9	454.597	11310	42.23	628	9.29
Abu Hammad	5	208.724	5101	46.83	620	22.44
Al-MAnzala	1	463.761	9789	152.31	1028	32.84
Sidi Ghazi	3	151.956	3343	106.64	471	45.22
Meet Salsil	1	408.229	7613	74.40	703	18.23
Edfo	16	869.38	12892	87.73	734	10.09
Al Qurna	5	697.082	6905	139.95	1012	20.08
Basion	1	488.112	15282	124.89	1647	25.59
Kafr Shukr	1	204.617	3527	35.48	437	17.34
Al-Khanka	1	569.634	1090	169.96	653	29.84

Al-Santa	1	270.363	6004	140.35	1456	51.91
Samnod	1	395.616	12392	23.83	172	6.02
Monshaat Abo-Omar	4	555.633	12123	117.18	1256	21.09
Average Vacant areas area		13931.5	173089	2369.98	17475	17.01

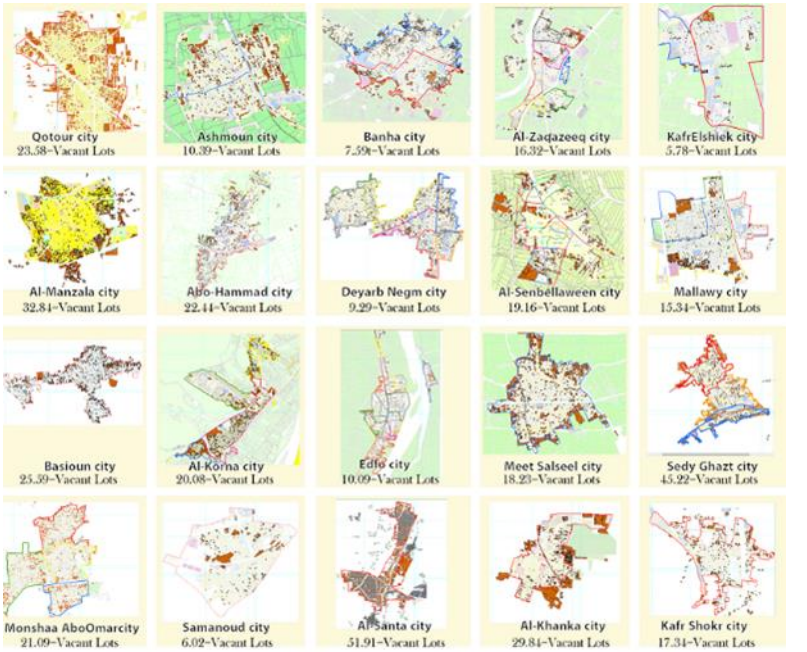

Figure 10. Area of vacant areas and the number of plots in the selected cities (GOPP (2019) (16)

Mechanisms of developing vacant areas socially

If the vacant area is managed appropriately it can contribute to social development. (Kim (2016). p,2.) (30) The effective use of vacant areas by the media, educational institutions, NGOs, and the local community should also be increased, as well as targeting specific groups, especially children and adolescents. (Inam (2012). p,10.) (24) Vacant areas may also provide new opportunities for innovative use of open space and alternative landscape designs, especially in areas with high densities. (Kim (2016). p,2.) (30) Also interacting with the living community along with planning, and greening vacant areas reduces crime, geolocation, social media, distance, or proximity to services such as parks, libraries, and schools. (CAPMS (2017). p,2.) (11) In addition, researchers, public health practitioners, and urban planners should involve residents in the design and implementation of successful strategies for vacant area management. (Garvin, E., Branas, C., Keddem, S., Sellman, J., & Cannuscio, C. (2013). p,1.) (14) Simple cleaning and greening work by individuals can also be Inspiration, others do the same. (Gobster, Rigolon, Hadavi, Stewart (2020). p,9.) (19) Also, security of tenure, re-operation of land, planning of land use, tax systems on land (loan and financing systems), management of land markets and prices, provision

of land services and utility networks, management of informal areas. (Kamal, Marghani, Adib (2009). p, 797.) (26) The establishment of a bank of vacant areas in the city of Cleveland in the seventies, and once the city acquired the ownership of abandoned properties due to tax seizure, and thus the city became the owner of thousands of plots of vacant areas, after Demolished unfit and neglected buildings, the city was developing plots and returning them to tax rolls, many unbuildable due to their size, and the city was selling many of them at an attractive price to community development centers, gardening, and parking. In Ohio, there are more than 200 community parks managed by residents for the use and consumption the food. (Keating, (2010). p,7.) (28) Also provide access to water resources and infrastructure needed for development, develop strategies to aid intervention and support community garden challenges (Rees, A., et al. (2011). p, 20.) (46). Greening and horticulture interventions can also play a strong role in controlling crimes, and the study indicates that the cost of greening and maintaining vacant plots is 145, 319, and 960 million, respectively, for a small, medium, and large traditional city, respectively, which is 8.9, 11.2, 23.2% Savings on offenses to take over. (Sadatsafavi, Sachs, Shepley, Kondo, Barankevich (2022. p,9-10.) (47) In addition, interventions such as greening and horticulture reduce rates of gun violence, and the study has demonstrated that information about open spaces is accessible. from all societies, regardless of their physical conditions, thus reducing the risk of urban inequality arising from a lack of information. (Sadatsafavi, Sachs, Shepley, Kondo, Barankevich (2022. p,) (47) Long-term management of vacant areas is also an important aspect of financing vacant acres and, through its size, can provide environmental, social, and cultural services to communities, adopting sustainable and long-term management The term includes levels of community participation, support for positive activities, and continuous access to them. (Kremer, Hamstead (2015). p,4.) (35) To improve urban sustainability, city planners and policymakers need to develop strategic environmental resource management within the city to meet expansion needs. McPhearson (2012. p,2.) (37) Some studies have proven that targeting the relationship between population and society in the context of beautifying vacant areas through the population themselves, as this affected the social interaction between residents and community belonging. The study proved that beautifying space plots can be a means of empowering societies to work for positive change. (Stewart, Gobster, Rigolon, Strauser, Williams, Riper (2019). p, 200) (53) Examples include tree planting and home repainting through the participation of individuals in their neighborhood. (Stewart, Gobster, Rigolon, Strauser, Williams, Riper (2019). p, 200) (53) Vacant areas greening programs aim to improve the physical condition, and aesthetics of distressed neighborhoods, which are not public spaces in the legal sense and are seen as amenities in a way Similar to services. (Heckert, Mennis (2012). p,3013.) (22) Residential facilities are all facilities and services of the community, which are required for accommodation, comfort, and health of the population in the area being developed, and the housing elements in it, and constitute housing, services, and public utilities. (2) The census of Egypt in 2018 reached the total of the republic: urban: 400,46125, while the total of the republic was rural: 5,172,653. (CAPMS (2017). p,) (10)

Mechanisms of developing vacant areas informationally

The successful transformation of vacant areas in any city depends on accurate, comprehensive, and computerized information, and the efficiency of the city's local administration. (Papagano & Bowman (2000). p,8.) (43) Smart retreat aims to repurpose empty plots of land through temporary implementation of urban or ecological functions, converting them into parks or meeting other community needs, and smart retreat: is the reallocation of unused urban space for common community needs. (Newman, Hollander (2016). p,3.) (40) The I_Tree_Echo model can be a valuable tool in assessing urban vacant areas ecosystem services, and has the potential to be used in setting priorities in establishing planning and design guidelines for the future in terms of development or space conservation. (Kim, Miller, Nowak, (2015). p, 526.) (32) Some studies have demonstrated that consolidation of future vacant areas functions by modeling urban forecasting and the use of green infrastructure by re-greening vacant plots can lead to Reduced urban pollution, address natural disasters in places of floods, and also in old cities that contain large industrial land uses by incorporating land use. (Zhu & Newman (2021). p, 1) (56) The use and maintenance of city-owned plots through urban farming of open land, and the goal of this development process is a successful adaptation to nature in a sustainable urban environment. (SPIRN, (2012. p, 2) (50) Determine the optimal activity according to the following variables: the distance from the nearest (school, library, or park), also the accessibility to the nearest (public transport station, train station, or bus stop), in addition to the value of the property of the neighborhood (within a circle of radius 0.5 miles), also the value of the property, location. (CAPMS (2017). p,2.) (11) The value of vacant areas within a 0.5-mile radius will negatively affect the overall value of the neighborhood in the long run (CAPMS (2017). p,3.) (11) An updated registration information system and updated maps (Aboud, (2017). p,1-7) (1). An integrated information system on state lands through: updated databases and digital maps with the coordinates of all exploited and untapped state lands and their optimal uses, making this data available to all parties dealing with lands, also linking and automating the information system at the level of the Republic so that all parties deal with the same data and the same Maps and they are updated automatically, in addition to making available data and maps of the area of the state's lands available for investment, the jurisdiction over them, the terms and procedures for allocation, any conditions for other parties, any privileges under other laws, the cost, time and method of allocation to investors, with the provision of an electronic link with the state authorities to ensure periodic updating of these data , and also taking advantage of modern technologies (Big Data, Blockchain) in modernizing land management, which increases efficiency, reduces corruption and facilitates follow-up. (Aboud, (2017). p,1-7) (1).

Conclusions

Establish a successful integrated management system for vacant areas requires the use of the elements of land management on certain bases as follows:

Economically

Increasing local government services and their revenues and using them in urban services enhances the quality of life, and a policy is required to facilitate the lease of vacant areas to facilitate the transfer of land for housing, commercial and industrial purposes, as well as the identification and approval of real estate values that constitute a tax assessment, and annual value increases according to local market conditions. It was also found that there is an increase in housing prices near vacant areas that have been developed and converted into green areas compared to lands that have not been developed, as the percentage of real estate increased by 3%. Also, the expansion of the city towards the suburbs, despite the availability of vacant areas in the city center, increases the costs of social and technical infrastructure that local governments cannot afford.

Administrative and legislative

Communication must be improved not only with users and owners but also with district-specific use agents, and political agencies and districts must increase cities' inventory of vacant area lists and develop standard contracts, revitalize temporary use operations, and review laws regulating temporary use. In addition to encouraging decision-making processes through participation during the process of conducting field surveys through the formation of committees, public hearings, accountability, and monitoring to reach agreement and consensus. It is also necessary to build a knowledge base about the characteristics of vacant plots, the types of uses they serve, and their potential for social and ecological transformation through strategic urban planning and development, and coordination between the authorities concerned with vacant areas.

Physically

It is necessary to develop a master plan for the use of the vacant area to coordinate all activities according to the specific conditions of each plot. It is also necessary to determine the relationship between the master plans of cities and patterns of urban growth. It is also necessary to publish available maps of the vacant areas for development, whether owned by the city or the private sector and to make maps of vacant areas in the city that are available to the public. It considers directing development in intended urban promotion areas and avoiding urban developments in designated protected areas. It is necessary to work on the availability of facilities, as studies have proven that they are a strong indicator of the vacancy conversion of vacant areas. It is also necessary to work on finding the necessary mechanisms to transform vacant areas into various activities in the future.

Environmentally and Socially

Long-term management of vacant areas is an important aspect of financing vacant areas, and through its size, can provide environmental, social, and cultural services to communities. The sustainable and long-term management of vacant areas depends on levels of community participation, support for positive activities, and continuous access to them. As well as continuous maintenance

and finding appropriate cultural and social flexible standards and determining the desired minimum level of development. The large vacancy of land was also addressed by defining the minimum aesthetic and functional standards that people put on the land such as planting flowers and plants on vacant areas, building patios, or playing areas for children and families. It also requires an understanding of the consequences of developing and beautifying the vacant plot and its impact on the annexes of the owner's place and its effects to enhance the sense of community. The vacant areas also affect the community's well-being, physical health, and mental health, and contribute to reducing dissension among neighbors, as well as affecting physical health through the accumulation of garbage, attraction to rodents, and mental health through reducing anxiety. Also, the existence of a standard measure for the care and development of vacant areas through neighborhood assessments, and visual assessments.

Informationally

Forming a working team trained on the latest computer technologies, taking advantage of the latest planning theories in the field of land management, which have proven successful in previous practical experiences. Finding a scientific and digital method that leads to arranging lands in cities according to urban development priorities, and setting up a program to provide neighborhoods with networks of public facilities and services in the framework of the actual needs to achieve the optimal use of the vacant areas in the Egyptian cities.

Declarations

The authors declared that there is no conflict of interest.

Abbreviations

GOPP: General Organization for Physical Planning; UBL: Unified Building Law.

Acknowledgments

The authors are grateful to the General Organization for Urban Planning Authority for their contribution to submitting reliable pieces of information.

Authors' contributions

Both authors participated in conceptualizing the study. MA reviewed literature, survey, and photography, data analysis, writing original draft, reviewing and editing while TA revised data and initial draft.

Funding

No funding was received or used in producing this paper.

Availability of data and materials
All the data required are included in the manuscript.

Ethics approval and consent to participate
Not applicable.
Consent for publication
Not applicable.
Competing interests:
The authors declare that they have no competing interests.

References

1. Aboud, S, The State Land Administration System in Egypt (2017): The Current Status and Development Proposals, ECES-WP196-A, *http://www.eces.org.eg/cms/NewsUploads/Pdf/2019_1_14-21_17_4621.pdf* P, 6-10.
2. Allam, A, K; Ghaith, M, M. (1995) Planning the Residential Neighborhood; Cairo, https://drive.google.com/file/d/1epEXuCDz5VytahYHQWGGOjEmvoKGPeU4/view?usp=sharing , p, 250.
3. AlOmran, A; Stancati, M (2016). Saudi Tax Targets Undeveloped Land, The Wall Street Journal, *https://www.wsj.com/articles/saudi-tax-targets-undeveloped-land-1454409001?reflink=desktopwebshare_permalink*
4. Aliefendioğlu, Y., Sevgen, S.C., & Tanrıvermiş, H. (2017). TRANSFORMATION OF LAND-TO-LAND LOT, VALUE GAIN, LAND SPECULATION, AND OPPORTUNITIES FOR SHARING VALUE INCREMENT: AN EVALUATION OF THE TURKEY EXAMPLE, https://www.academia.edu/33433764, p2, 22-27.
5. Aruninta, Ariya. (2005). MANAGING PUBLICLY OWNED URBAN VACANT AREAS REDEVELOPMENT PROJECTS IN BANGKOK,THAILAND.https://www.researchgate.net/publication/215563499_MANAGING_PUBLICLY_OWNED_URBAN_VACANT_LAND_REDEVELOPMENT_PROJECTS_IN_BANGKOK_THAILAND p, 1-3.
6. Assaf Office for Engineering Consultancy (2019), Preparation the Urban Observatory of Qotour City, Al-Gabyia Province, Egypt, https://drive.google.com/file/d/15AnSW4aDv4SVPcThdV34Vzk9blFW0xYP/view
7. ADB, Consultants' Reports, (2013). Urban Planning and Land Management for Promoting Inclusive Cities, Project Number 41609-012, India. https://www.adb.org/sites/default/files/project-document/81205/41609-012-tacr-01.pdf. P, 2-3, 9-13
8. Blumner, N. (2006) T Planning for the Unplanned: Tools and Techniques for Interim Use in Germany and the United States, https://repository.difu.de/jspui/bitstream/difu/130737/1/DF10239.pdf. P, 3-4, 8-24
9. Bowman, A. O.'. M., & Pagano, M. A. (2000). Transforming America's cities: Policies and conditions of vacant areas. Urban Affairs Review, 35(4), 559–581. https://doi.org/10.1177%2F10780870022184534. P, 1-3.
10. Central Agency for Public Mobilization and Statistics (2017) Book of Final Results of the General Census of Population, Housing, and Establishments, https://www.capmas.gov.eg/party/party.html
11. Chowdhury, Md & Sharma, Naveen. (2022). LotRec: A Recommender for Urban Vacant Lot Conversion

https://www.researchgate.net/publication/358424252_LotRec_A_Recommender_for_Urban_Vacant_Lot_Conversion .p, 1-5, 8.
12. Executive Regulations of the Investment Law (2017) promulgated by Law No. 2 of 2017; Official Gazette, No. 43 bis (A), https://www.womenconnect.org/documents/87362/451958/New+Investment+Law+in+English.pdf/ee4b16b0-7017-3ad7-69ef-8b423bf61f11
13. Field documentation (2019) by the researcher for the survey of vacant areass in the cities of Shubra El-Kheima and El-Mahalla El-Kubra, respectively, from June to September 2019. https://drive.google.com/file/d/1lhxOW7xylh17j3g4ASg1v5mghcG7T5R2/view?usp=sharing.
14. Garvin, E., Branas, C., Keddem, S., Sellman, J., & Cannuscio, C. (2013). More than just an eyesore: local insights and solutions on vacant areas and urban health. *Journal of urban health: bulletin of the New York Academy of Medicine*, *90*(3), 412–426. https://doi.org/10.1007/s11524-012-9782-7. P 417.
15. Global Human Settlements Report (2009) Planning Sustainable Cities, https://unhabitat.org/sites/default/files/download-manager-files/Global%20Report%20on%20Human%20Settlements%202009%20Planning%20Sustainable%20Cities.pdf , PP, 69-70
16. GOPP (2019), Analyzes conducted by researchers on the vacant areas of 20 large, medium and small cities in Egypt. https://drive.google.com/file/d/1xrBhNwTOCXbGExObklGMKpyEmKRBZNHx/view?usp=sharing.
17. GOPP (2014) the national strategic plan for urban development and priority development areas; January 2014, http://gopp.gov.eg/wp-content/uploads/2015/01/GOPP-PA_2014.pdf , p11.
18. Goldstein, J., Jensen, M., & Reiskin, E. (2001). Urban vacant areas redevelopment: Challenges and progress (Vol. 37). Cambridge, MA: Lincoln Institution, p, 9-12, 22.
19. Gobster, P.H., Rigolon, A., Hadavi, S., Stewart W.P (2020) Beyond proximity: Extending the “greening hypothesis” in the context of vacant lot stewardship, Landscape and Urban Planning, Volume 197, https://doi.org/10.1016/j.landurbplan.2020.103773. P,4-7, 9.
20. Gobster, P.H., Rigolon, A., Hadavi, S., Stewart, W.P., (2020) The condition-care scale: A practical approach to monitoring progress in vacant lot stewardship programs, Landscape and Urban Planning, Volume 203, 103885, ISSN 0169-2046, https://doi.org/10.1016/j.landurbplan.2020.103885 . P, 11.
21. Haas, A., & Kopanyi, M. (2017). Taxation of Vacant Urban Land: From Theory to Practice. https://www.academia.edu/39413097/Taxing_vacant_urban_land_in_Kampala . p, 2-3.
22. Heckert, M., & Mennis, J. (2012). The Economic Impact of Greening Urban Vacant areas: A Spatial Difference-In-Differences Analysis. *Environment and Planning A: Economy and Space*, *44*(12), 3010–3027. https://doi.org/10.1068/a4595. P, 3013-3025.
23. Investigative Field Visits (2019) by researcher M.A during which all photos were taken by the researcher. https://drive.google.com/file/d/1nrD-bdtPJPqw_OvamHAht7LDhGZH8K_1/view?usp=sharing

24. İnam, Ş. (2012). The Importance of The Urban Land Policy for Sustainable Development, Problems and Solution Recommendations. https://www.semanticscholar.org/paper/The-Importance-Of-The-Urban-Land-Policy-For-And-%C4%B0nam/16cfd612cb2eed6a529d9ea3f407953d8ed1c44e . p, 5-10.
25. John Accordino & Gary T. Johnson (2000) Addressing the Vacant and Abandoned Property Problem, Journal of Urban Affairs, 22:3, 301-315, DOI: 10.1111/0735-2166.00058. p, 1.
26. Kamal, E.K.; Marghani, I.A; Adib N.R (2009). The Role of Urban Land Management in Solving Urban Problems (Assiut City Case Study): Journal of Engineering Sciences; Assiut University, https://life.aun.edu.eg/engineering/node/34202 . P, 792-794, 797.
27. Kobayashi, D, T, Ikaruga, S (2016). Occurrence factors of large vacant lots in central districts and their utilization by local governments in Japan, Frontiers of Architectural Research, Volume 5, Issue 4,Pages 393-402,ISSN 2095- https://doi.org/10.1016/j.foar.2016.09.006. P, 394-400.
28. Keating W. D, (2010) Redevelopment of Vacant areas in the Blighted Neighborhoods of Cleveland, Ohio, resulting from the Housing Foreclosure Crisis, 4 Journal of Regeneration and Renewal 39. P, 7. أين المرجع لا يتوفر الرابط
29. Kelleher, C., Golden, H.E., Burkholder, S. *et al.* (2020). Urban vacant areas impart hydrological benefits across city landscapes. *Nat Commun* 11, 1563. https://doi.org/10.1038/s41467-020-15376-9 . p, 2-3.
30. Kim, G. 2016. "The Public Value of Urban Vacant areas: Social Responses and Ecological Value" *Sustainability* 8, no. 5: 486. https://doi.org/10.3390/su8050486. 1-2.
31. Kim, G., Miller, P.A.., Nowak, D.J. (2018). Urban vacant areas typology: A tool for managing urban vacant areas, Sustainable Cities and Society, Volume 36, Pages 144-156, ISSN 2210-6707, https://doi.org/10.1016/j.scs.2017.09.014. P, 144-146.
32. Kim, G; Miller, P.A.; Nowak, D.J. (2015). Assessing urban vacant areas ecosystem services: Urban vacant areas as green infrastructure in the City of Roanoke, Virginia. Urban Forestry & Urban Greening. 14(3): 519-526. https://www.sciencedirect.com/science/article/abs/pii/S1618866715000576?via%3Dihub .p, 525-526.
33. Kremer P., Hamstead, Z.A., McPhearson, T (2013) A social–ecological assessment of vacant lots in New York City, Landscape and Urban Planning, Volume 120, Pages 219, ISSN 0169-2046. https://doi.org/10.1016/j.landurbplan.2013.05.003 . p, 2. مطلوب ملف بي دي اف
34. Koroso H, N., Zevenbergen A, J., Lengoibon, M, (2020). Urban land use efficiency in Ethiopia: An assessment of urban land use sustainability in Addis Ababa, Land Use Policy, Volume 99, 105081, ISSN 0264-8377 https://doi.org/10.1016/j.landusepol.2020.105081. P,1-2
35. Kremer, P; Hamstead, Z (2015) "Transformation of Urban Vacant Lots for the Common Good: An Introduction to the Special Issue," *Cities and the Environment (CATE)*: Vol. 8: Iss. 2, Article 1. https://digitalcommons.lmu.edu/cate/vol8/iss2/1. p, 1-4
36. Lei Y., Flacke J., Schwarz, N, (2021) Does Urban planning affect urban growth pattern? A case study of Shenzhen, China, Land Use Policy, Volume

101, 105100, ISSN 0264-8377, https://doi.org/10.1016/j.landusepol.2020.105100 . p, 2-3.
37. McPhearson T, (2012) Vacant areas in Cities Could Provide Important Social and Ecological Benefits, New York, https://www.thenatureofcities.com/2012/08/21/vacant-land-in-cities-could-provide-important-social-and-ecological-benefits/ . p, 2-5
38. Mohamed, Y. (2013) Optimal use of land and sustainable development by application to the city of 6th October in Egypt; a paper published in the eleventh international scientific symposium of the Organization of Islamic Capitals and Cities "Environmental Protection Legislation: for Sustainable Development"; Makkah Al-Mukarramah, https://scholar.cu.edu.eg/?q=mmyoussif/files/7.pdf . p, 19-20.
39. Newman G, Park Yunmi, Ann O'. M. Bowman, Ryun Jung Lee, (2018) Vacant urban areas: Causes and interconnected factors, Cities, Volume 72, Part B, Pages 421-, https://www.researchgate.net/publication/320425737 .p, 421-422, 427. من المهم مراجعة صياغة المرجع مرة أخرى
40. Newman, G.D., Hollander, J. (2016) Transforming Vacant areas through Smart Decline, https://www.asla.org/2016studentawards/186277.html. P, 3-11.
41. Newman, G., Lee, J., Berke, P. (2016). Using the Land Transformation Model to Forecast Vacant areas. Journal of Land Use Science. http://dx.doi.org/10.1080/1747423X.2016.1162861 . p, 2-4, 8-11.
42. Newman, G., Smith, A., Brody, S. (2017). Repurposing Vacant areas through Landscape Connectivity. Landscape Journal. DOI:10.3368/lj.36.1.37. p, 37.
43. Papagano, M., & Bowman, A.O. (2000). Vacant areas in the Cities: An Urban Resource. p,8.
https://www.brookings.edu/wp-content/uploads/2016/06/paganofinal.pdf P1-2.7.
44. Porter, *M.E.*, (2019). NEW STRATEGIES FOR INNER-CITY ECONOMIC DEVELOPMENT, Feb97, Vol. 11 Issue 1, https://journals.sagepub.com/doi/10.1177/089124249701100102. p11, 17p.
45. Qutour City Information Center, https://drive.google.com/file/d/1GMAuY92xvUYa39vJYjZE91gXMRKe-Sft/view?usp=sharing.
46. Rees, A., et al. 2011. "Converting Vacant Lots into Assets: Comparing National Community Garden Programs to Community Garden Projects in Columbus GA." Columbus, GA.: Columbus Community Geography Center. [https://csuepress.columbusstate.edu/ccgc/11]. p, 16-20.
47. Sadatsafavi, H., Sachs, N.A., Shepley, M.M., Kondo, M.C., Barankevich, A.R., (2022). Vacant lot remediation and firearm violence – A meta-analysis and benefit-to-cost evaluation, Landscape and Urban Planning, Volume 218, 104281, ISSN 0169-2046, https://doi.org/10.1016/j.landurbplan.2021.104281 . p, 9-10.
48. Xu, S., Ehlers, M. (2022)Automatic detection of urban vacant areas: An open-source approach for sustainable cities, Computers, Environment and Urban Systems, Volume 91, 101729, ISSN 0198-9715,https://doi.org/10.1016/j.compenvurbsys.2021.101729. p, 1-2.
49. Shublaq, I., AbuRaed, A., Alqalami, T., Altwassi, E, Pizarro, R. (2022) Integrating the traditional Emirati community within urban fabric of the city

to enhance the historical identity, Heliyon, Volume 8, Issue 1, e08650, ISSN 2405-8440, https://doi.org/10.1016/j.heliyon.2021.e08650. P, 1-4, 15.
50. SPIRN A, (2012), Cutting Through the Red Tape: How Baltimore's vacant lot programs have made it easier for communities to revitalize the underutilized and blighted spaces in their neighbourhoods, Colleen McHugh.https://web.mit.edu/nature/projects_12/pdfs/McHughBaltimoreVacancy1SMALL.pdf. P, 2, 9.
51. Song, X., Wen, M., Shen, Y (2020). Urban vacant areas in growing urbanization: An international review. *J. Geogr. Sci.* 30, 670. https://doi.org/10.1007/s11442-020-1749-0. P, 669-671.
52. State Land Recovery Committee (2016) Decision of the President of the Arab Republic of Egypt No. (75), *https://gate.ahram.org.eg/News/859494.aspx*
53. Stewart, W.P., Gobster, P.H., Rigolon, A., Strauser, J., Williams, D.A., & van Riper, C.J. (2019). Resident-led beautification of vacant lots that connects place to community. *Landscape and Urban Planning*. https://doi.org/10.1016/j.landurbplan.2019.02.011. P, 200-201.
54. Unified planning law proposed (2017) by the Ministry of Planning, Ministry of Local Development and Ministry of Housing; approved by the Council of Ministers, https://english.ahram.org.eg/News/454617.aspx
55. United States. Government Accountability Office. (2011) Vacant Properties: Growing Number Increases Communities' Costs and Challenges, report, November 4; Washington D.C. (https://digital.library.unt.edu/ark:/67531/metadc295440/m1/91/ .p, 83.
56. Zhu, R & Newman, G. (2021). The projected impacts of smart decline on urban runoff contamination levels. Computational Urban Science. DOI:10.1007/s43762-021-00002-1. P, 1,17.
57. Nyandra, M., Kartiko, B.H., Susanto, P.C., Supriyati, A., Suryasa, W. (2018). Education and training improve quality of life and decrease depression score in elderly population. *Eurasian Journal of Analytical Chemistry*, *13*(2), 371-377.